Stainless steel maintenance and cleaning

Stainless steel is an incredibly resilient and durable material. With a little care and occasional proper maintenance it can look beautiful and last indefinitely.

A small percentage of the discoloration or staining that can occur on stainless steel is due to a variety of environmental factors including acid rain, de-icing salt spray, coastal environments and areas of heavy pollution. These substances have to remain on the surface of the stainless steel long enough and in sufficient concentration to initiate corrosion. Frequent cleaning by heavy rain or manual washing can prevent corrosive compound accumulation and corrosion. For environments which are heavily corrosive more frequent manual washing is recommended.

The majority of rust that is found on stainless steel is due to contamination of the stainless steel base metal with a non-corrosion resistant material like carbon steel, cast iron, or other low alloy steels. This “free Iron” contamination is what is causing the visible (red rust) that is often mistaken for rusting stainless steel. The first solution for avoiding visible rust on stainless steel is the prevention of contamination.

Good installation practice avoids allowing stainless steels to come in contact with ordinary iron or steel, such as work tables, lifting tools, storage racks, steel turning rolls, steel truck beds and chains, steel fork lifts, etc. Cleaning and grinding tools, such as grinding wheels and wire brushes that have been used on carbon or low alloy steel should not be used subsequently on stainless steels. Only stainless steel wire brushes should be used on stainless steel.

Cleaning Stainless Steel Finishes

General Cleaning

In all cases, it is best to use a clean soft cloth if you need to manually loosen contaminants when applying cleaning solutions. If scrubbing and scraping must be attempted, the softest utensil possible (soft bristle brush or plastic scraper, for example) should be tried in a small, hidden test area before proceeding. In the case of a grained finish, wiping with the grain is advisable. The following methods are effective for general cleaning:

- Glass Cleaner or other detergent/ammonia solution, followed by a rinse.
- Power washing with a mild detergent and rinse.
- Citric cleaning solutions, followed by a rinse can also offer good results.
- WD-40

- WOW! EZ finish stainless steel cleaner. (Refer to manufacturer's instructions)

Cleaning Rust

There are varying degrees of surface rust or staining on stainless steel. Depending on the severity of the contamination we suggest starting with the least aggressive method and working your way up to the most aggressive. We have listed the cleaning methods from least aggressive to most.

- Dilute Citric Acid, followed by a rinse
- Baking Soda Paste (mixed with water and/or white vinegar)
- Caustic Soda Solution (15% maximum), followed by a warm water rinse. (Refer to manufacturer's instructions)
- Citrisurf 77 (highly recommended). (Refer to manufacturer's instructions) http://www.theruststore.com/CitriSurf-77-Plus-Liquid---Gallon-P222C64.aspx
- Derustit ss-3 chemical cleaner. (Refer to manufacturer's instructions) http://www.derustit.com/products/derustit_ss3.php

What to Avoid:

Cleaning stainless steel requires care. There are certain mechanical and chemical treatments that must be avoided in order to preserve the appearance and corrosion resistance of this material:

- Steel Wool, including soap pads like Brillo® – Beyond damaging the surface with scratches, iron particles will promote surface rust.
- Abrasives – Decorative stainless steel surfaces have limited abrasion resistance and will therefore show witness marks from the use of abrasives in cleaning. Please note that many commercially available cleaning liquids include abrasives and should therefore be avoided.
- Chlorides – Bleach and other chlorine-bearing cleaning compounds will promote rust.

Muriatic Acid – There are acids that work well to clean stainless steel. Muriatic is not among them!